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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,947	05/25/2001	Mikko J Rinne	P278096	9586

909 7590 12/12/2005

PILLSBURY WINTHROP SHAW PITTMAN, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER	
MEW, KEVIN D	

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/806,947	RINNE, MIKKO J	
	Examiner	Art Unit	
	Kevin Mew	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Final Action

Response to Amendment

1. Applicant's Arguments/Remarks received on 11/23/2004 regarding claims 1-20 have been considered. Claim 1-20 are currently pending.

2. Acknowledgement is made of the amended claims 10, 14, 16 regarding the claim objections set forth in the previous Office Action. The corrections are acceptable and the claim objections to claims 10, 14, 16 have been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-16, 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kudoh et al. (USP 5,414,702).

Regarding claim 1, Kudoh discloses a data segmentation method in a telecommunications system, comprising:

segmenting larger data units of a higher layer (CS Sublayer protocol data unit CS-PDU) into smaller protocol data units of a lower layer (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3) so that each lower layer protocol data unit includes one or more data segments each containing

data from a different one of the upper layer data units (each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

providing the lower layer protocol data units containing two or more data segments (a plurality of SAR-PDU units contains a plurality of SAR-SDU), with segmentation length information which otherwise indicates length of the data segments (SART is made up of LI which represents the effective information length of the cell, see col. 3, lines 51-67 and Fig. 4);

indicating with predetermined values of the segmentation length information (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4), special information about the higher level protocol data unit instead of the length of the segments (ending of message EOM, see col. 3, lines 31-67) at least in the lower layer protocol data units contains two or more data segments (lower layer SAR sublayer contains a plurality of SAR-PDUs);

transmitting the lower level protocol data units to a receiving end (transmitting SAR-PDUs to buffer device, see element 3, Fig. 1); and

assembling the segmented higher level data unit at the receiving end by means of the segmentation length information (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33).

Regarding claim 2, Kudoh discloses the method of claim 1, wherein the special information includes indication whether the higher layer data unit ends in a current data segment (ending of message EOM, see col. 3, lines 31-67) or continues to a next lower level protocol data unit (continuing of message COM, see col. 3, lines 31-67).

Regarding claim 3, Kudoh discloses the method of claim 1, further comprising indicating with a predetermined value of the segmentation length information that the rest of the lower level protocol data unit contains padding until a next segmentation length information or a next lower level protocol data unit contains padding (see the PAD field, which is a preset integer of β bytes, of the SAR-PDU unit in the SAR Sublayer, see col. 3, lines 31-42 and Fig. 4).

Regarding claim 4, Kudoh discloses the method of claim 1, further comprising indicating with the segmentation length information an exact point in the end of the lower layer protocol data unit that the higher layer data unit ends (ending of message EOM in the SAR-PDU unit of the SAR sublayer, see col. 3, lines 31-67).

Regarding claim 5, Kudoh discloses the method of claim 1, further comprising indicating with a predetermined value of the segmentation length information that the higher layer data unit carried in a current data segment continues to a next lower level protocol data unit (continuing of message COM in the SAR-PDU unit of the SAR sublayer, see col. 3, lines 31-67).

Regarding claim 6, Kudoh discloses a data segmentation method in a telecommunication system, comprising:

segmenting larger data units of a higher layer (CS Sublayer protocol data unit CS-PDU) into smaller protocol data units of a lower layer (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3)

so that each lower layer protocol data unit includes one or more data segments each containing data from a different one of the upper layer data units (each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

providing the lower layer protocol data units containing two or more data segments (a plurality of SAR-PDU units contains a plurality of SAR-SDU), with segmentation length information which otherwise indicates length of the data segments (SART is made up of LI which represents the effective information length of the cell, see col. 3, lines 51-67 and Fig. 4);

indicating with predetermined values of the segmentation length information (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4), special information about the higher level protocol data unit instead of the length of the segments (ending of message EOM, see col. 3, lines 31-67) at least in the lower layer protocol data units contains two or more data segments (lower layer SAR sublayer contains a plurality of SAR-PDUs);

transmitting the lower level protocol data units to a receiving end (transmitting SAR-PDUs to buffer device, see element 3, Fig. 1); and

assembling the segmented higher level data unit at the receiving end by means of the segmentation length information (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33); and

providing no segmentation information in a lower layer protocol data unit (when receiving no LI) which contains data only from a single one of the higher layer data units and no padding (the value of 44 bytes are outputted as the effective length of the SAR-PDU, see col. 7, lines 3-9).

Regarding claim 7, Kudoh discloses the method of claim 1, further comprising providing segmentation information (SARH and SART of the SAR-PDU) in a lower layer protocol data unit (SAR-PDU) which contains data only from a single one of the higher layer data units (contains data from the CS-PDU, see Fig. 3) and padding (PAD field, see Fig. 3).

Regarding claim 8, Kudoh discloses segmentation method in a telecommunications system comprising:

segmenting larger data units of a higher layer (CS Sublayer protocol data unit CS-PDU) into smaller protocol data units of a lower layer (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3) so that each lower layer protocol data unit includes one or more data segments each containing data from a different one of the upper layer data units (each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

providing the lower layer protocol data units containing two or more data segments (a plurality of SAR-PDU units contains a plurality of SAR-SDU), with segmentation length information which otherwise indicates length of the data segments (SART is made up of LI which represents the effective information length of the cell, see col. 3, lines 51-67 and Fig. 4);

indicating with predetermined values of the segmentation length information (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4), special information about the higher level protocol data unit instead of the length of the segments (ending of message EOM, see col. 3, lines 31-67) at least in the lower layer protocol data units contains two or more data segments (lower layer SAR sublayer contains a plurality of SAR-PDUs);

transmitting the lower level protocol data units to a receiving end (transmitting SAR-PDUs to buffer device, see element 3, Fig. 1); and

assembling the segmented higher level data unit at the receiving end by means of the segmentation length information (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33, and Figs. 2 and 5); and

carrying the segmented higher layer data units in the payload units (carrying CS-PDU into SAR-PDU units, see Fig. 3);

providing a segmentation indicator field in a beginning of one or more of the payload units in the lower level protocol data unit, if required (providing SARH at the beginning of each SAR-PDU unit, see Fig. 3); and

indicating in a header (Segment Type ST) of the lower layer protocol data unit (Segment Type ST in the header of the SAR-PDU)which one or ones, if any, of the payload units contain the segmentation length information (Segment Type indicates whether it is the ending of message EOM, and if it is, the last payload unit is appended with LI effective length information, see col. 3, lines 51-67 and Fig. 3).

Regarding claim 9, Kudoh discloses the method of claim 8, further comprising providing a segmentation indicator field (SARH, see Fig. 3) in a beginning of a first one of the payload units (SARH of the SAR-PDU, see Fig. 3) for indicating segmentation information for all segments in the lower level protocol data unit, if required (SARH indicates Segment Type, Sequence Number of Multiplexing Identifier MID, see col. 3, lines 51-67).

Regarding claim 10, Kudoh discloses a telecommunications system, comprising

an upper protocol layer including upper layer data units (CS sublayer includes CS-PDU units, see col. 3, lines 31-67);

a lower protocol layer (SAR sublayer) including protocol data units (SAR-PDU) having a payload size smaller than the upper layer data units (SAR-PDU units have payload size smaller the CS-PDU units in the CS sublayer, see col. 3, lines 31-50 and Fig. 3);

means for segmenting larger data units of a higher layer (CS Sublayer protocol data unit CS-PDU) into smaller protocol data units of a lower layer (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3) so that each lower layer protocol data unit includes one or more data segments (each SAR-PDU contains SARH, SART, and SAR-SDU) each containing data from a different one of the upper layer data units (each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

means for inserting segmentation length information (LI) which indicates length of the data segments at least in the lower layer protocol data units (SAR-PDU units) containing two or more data segments (LI is inserted in the SART of the SAR-PDU to indicate the effective length information, see col. 3, lines 51-67 and Figs. 3; note that SAR-PDUs containing SAR-SDUs);

means for providing a predetermined value in the segmentation length information to a receiver (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4), the predetermined value including special information about the higher level protocol data unit instead of the length of the segments (ending of message EOM, see col. 3, lines 31-67) at least in

the lower layer protocol data units contains two or more data segments (lower layer SAR sublayer contains a plurality of SAR-PDUs);

means for assembling the segmented higher level data units from received lower layer protocol data units at the receiver by means of the segmentation length information in the protocol data units (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33 and Figs. 2 and 5).

Regarding claim 11, Kudoh discloses the system of claim 10, further comprising a predetermined value of the segmentation length information indicating to the receiver that a rest of the lower level protocol data unit contains no padding until a next segmentation length information or a next lower level protocol data unit contains padding (see the PAD field, which is a preset integer of β bytes, of the SAR-PDU unit in the SAR Sublayer where no padding is used, see col. 3, lines 31-42 and Fig. 4).

Regarding claim 12, Kudoh discloses the system of claim 10, further comprising a predetermined value of the segmentation length information indicating to the receiver that the higher layer data unit carried in the current data segment continues to a next lower level protocol data unit (continuing of message COM in the SAR-PDU unit of the SAR sublayer, see col. 3, lines 31-67).

Regarding claim 13, Kudoh discloses the system of claim 10, wherein the segmentation length information points exactly to an end of the lower layer protocol data unit

where the higher layer data unit ends (ending of message EOM in the SAR-PDU unit of the SAR sublayer, see col. 3, lines 31-67).

Regarding claims 14, 20, Kudoh discloses a telecommunications system and a network element (packet assembler/disassembler, see Figs. 2 and 5), comprising:

a network element being configured to support an upper protocol layer including upper layer data units (CS sublayer includes CS-PDU units, see col. 3, lines 31-67);

a network element being configured to support a lower protocol layer (SAR sublayer) including protocol data units (SAR-PDU) having a payload size smaller than the upper layer data units (SAR-PDU units have payload size smaller the CS-PDU units in the CS sublayer, see col. 3, lines 31-50 and Fig. 3);

a network element being configured to segment larger data units of a higher layer (CS Sublayer protocol data unit CS-PDU) into smaller protocol data units of a lower layer (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3) so that each lower layer protocol data unit includes one or more data segments each containing data from a different one of the upper layer data units (each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

a network element being configured to insert segmentation length information (LI) which indicates length of the data segments at least in the lower layer protocol data units (SAR-PDU units) containing two or more data segments (LI is inserted in the SART of the SAR-PDU to

indicate the effective length information, see col. 3, lines 51-67 and Figs. 3; note that SAR-PDUs containing SAR-SDUs);

a network element being configured to provide a predetermined value in the segmentation length information to a receiver (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4), the predetermined value including special information about the higher level protocol data unit instead of the length of the segments (ending of message EOM, see col. 3, lines 31-67) at least in the lower layer protocol data units contains two or more data segments (lower layer SAR sublayer contains a plurality of SAR-PDUs);

a network element being configured to assemble the segmented higher level data units from received lower layer protocol data units at the receiver by means of the segmentation length information in the protocol data units (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33 and Figs. 2 and 5).

two or more payload units (SAR-SDU units) of a predetermined length in each lower level protocol data unit (SAR-PDU units), with two or more payload units of a predetermined length for carrying the segmented higher layer data units (SAR-SDU payload units are of 44 bytes predetermined length), the payload unit being a smallest unit in a retransmission protocol employed (SAR-SDU being the smallest unit, see Fig. 3);

a segmentation indicator field in a beginning of one or more of the payload units in the lower level protocol data unit, if required (providing SARH at the beginning of each SAR-PDU unit, see Fig. 3); and

at least one indicator in a header (Segment Type ST) of the lower layer protocol data unit (Segment Type ST in the header of the SAR-PDU)which one or ones, if any, of the payload units

contain the segmentation length information (Segment Type indicates whether it is the ending of message EOM, and if it is, the last payload unit is appended with LI effective length information, see col. 3, lines 51-67 and Fig. 3).

Regarding claim 15, Kudoh discloses a data segmentation method in a telecommunication system, comprising:

segmenting larger first data units of a higher protocol layer (CS Sublayer protocol data unit CS-PDU) into data segments that can be accommodated by smaller second data units of a lower protocol layer (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3), each second data unit comprising one or more data segments (each SAR-PDU contains SARH, SART and SAR-SDU), each data segment containing data from a different one of the first data units (each SAR-SDU contains data from a different part of the CS-PDU in the CS sublayer, see col. 3, lines 31-67 and Fig. 3);

providing the second data units with segmentation length information (SAR-PDUs are provided with LI effective length information) when the second data unit contains two or more data segments (SAR-PDU contains SARH, SART, and SAR-SDU, see col. 3, lines 31-67 and Fig. 3);

indicating with predetermined values of the segmentation length information (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4), special information (ending of message EOM) about the first data units, values of said segmentation length information other than said predetermined values indicating the length of the data segments

(ending of message EOM, see col. 3, lines 31-67) at least in the lower layer protocol data units contains two or more data segments (lower layer SAR sublayer contains a plurality of SAR-PDUs);

transmitting the lower level protocol data units to a receiving end (transmitting SAR-PDUs to buffer device, see element 3, Fig. 1); and

assembling the segmented higher level data unit at the receiving end by means of the segmentation length information (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33).

Regarding claims 16, 19, Kudoh discloses a telecommunications system and a network element (packet assembler/disassembler, see Figs. 2 and 5),

a network element being configured to support an upper protocol layer including first data units (CS sublayer includes CS-PDU units, see col. 3, lines 31-67);

a network element being configured to support a lower protocol layer (SAR sublayer) including second data unit (SAR-PDU) having a payload size smaller than first data units (SAR-PDU units have payload size smaller the CS-PDU units in the CS sublayer, see col. 3, lines 31-50 and Fig. 3);

a network element being configured to segment said first data units (CS Sublayer protocol data unit CS-PDU) into data segments that can be accommodated by the second data units for insertion into the second data units (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3) each second data unit comprising one or more data segments (each SAR-PDU contains SARH, SART,

and SAR-SDU), each data segment containing data from a different one of the first data units (each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

a network element being configured to insert a segmentation length information in the second data units when the second data unit contains data from two or more of the first data units (LI is inserted in the SART of the SAR-PDU to indicate the effective length information, see col. 3, lines 51-67 and Figs. 3; note that SAR-PDUs containing SAR-SDUs);

a network element being configured to set a predetermined value in the segmentation length information in order to provide a receiver (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4) with special information about the first data units (ending of message EOM, see col. 3, lines 31-67), values of said segmentation length information other than said predetermined values indicating the length of the data segments (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4); and

a network element being configured to assemble the segmented first data unit from received second data units at the receiver by means of the segmentation length information in said second data units (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33 and Figs. 2 and 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kudoh in view of Duault et al. (USP 5,930,265).

Regarding claim 17, Kudoh discloses a network element (packet assembler/disassembler, see Fig. 5), comprising

a network element being configured to support an upper protocol layer including first data units (CS sublayer includes CS-PDU units, see col. 3, lines 31-67);

a network element being configured to support a lower protocol layer (SAR sublayer) including second data unit (SAR-PDU) having a payload size smaller than first data units (SAR-PDU units have payload size smaller the CS-PDU units in the CS sublayer, see col. 3, lines 31-50 and Fig. 3);

a network element being configured to segment said first data units (CS Sublayer protocol data unit CS-PDU) into data segments that can be accommodated by the second data units for insertion into the second data units (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3) each second data unit comprising one or more data segments (each SAR-PDU contains SARH, SART, and SAR-SDU), each data segment containing data from a different one of the first data units

(each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

a network element being configured to insert a segmentation length information in the second data units when the second data unit contains data from two or more of the first data units (LI is inserted in the SART of the SAR-PDU to indicate the effective length information, see col. 3, lines 51-67 and Figs. 3; note that SAR-PDUs containing SAR-SDUs);

a network element being configured to set a predetermined value in the segmentation length information in order to provide a receiver (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4) with special information about the first data units (ending of message EOM, see col. 3, lines 31-67), values of said segmentation length information other than said predetermined values indicating the length of the data segments (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4); and

a network element being configured to assemble the segmented first data unit from received second data units at the receiver by means of the segmentation length information in said second data units (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33 and Figs. 2 and 5).

Kudoh does not explicitly show a mobile station is used as the network element to implement the data assembling and disassembling functions mentioned above.

However, Duault discloses a data processing system and method of communicating mobile voice data with ATM network (see col. 4, lines 54-67 and Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine data assembling/disassembling system and method of Kudoh with the teaching of

mobile voice data communicating with an ATM network such that the mobile station is used as the network element to implement the functions of the data assembling and disassembling. The motivation to do so is to provide the ability of transporting variable length data packets into conventional ATM cells with minimum delay.

Regarding claim 18, Kudoh discloses a network element, comprising

a network element being configured to support an upper protocol layer including upper layer data units (CS sublayer includes CS-PDU units, see col. 3, lines 31-67);

a network element being configured to support a lower protocol layer (SAR sublayer) including protocol data units (SAR-PDU) having a payload size smaller than the upper layer data units (SAR-PDU units have payload size smaller the CS-PDU units in the CS sublayer, see col. 3, lines 31-50 and Fig. 3);

a network element being configured to segment larger data units of a higher layer (CS Sublayer protocol data unit CS-PDU) into smaller protocol data units of a lower layer (CS Sublayer protocol data unit CS-PDU is divided into smaller SAR sublayer cell data units, SAR-PDU, see col. 3, lines 24-67 and Fig. 3) so that each lower layer protocol data unit includes one or more data segments each containing data from a different one of the upper layer data units (each of the lower layer SAR-PDU units includes a different one of the upper CD-PDU units, see Fig. 3);

a network element being configured to insert segmentation length information (LI) which indicates length of the data segments at least in the lower layer protocol data units (SAR-PDU units) containing two or more data segments (LI is inserted in the SART of the SAR-PDU to

indicate the effective length information, see col. 3, lines 51-67 and Figs. 3; note that SAR-PDUs containing SAR-SDUs);

a network element being configured to provide a predetermined value in the segmentation length information to a receiver (LI indicates the effective length information, see col. 3, lines 51-67 and Fig. 4), the predetermined value including special information about the higher level protocol data unit instead of the length of the segments (ending of message EOM, see col. 3, lines 31-67) at least in the lower layer protocol data units contains two or more data segments (lower layer SAR sublayer contains a plurality of SAR-PDUs);

a network element being configured to assemble the segmented higher level data units from received lower layer protocol data units at the receiver by means of the segmentation length information in the protocol data units (SAR-PDUs are assembled into a higher layer CS-PDU, see col. 4, lines 22-33 and Figs. 2 and 5).

two or more payload units (SAR-SDU units) of a predetermined length in each lower level protocol data unit (SAR-PDU units), with two or more payload units of a predetermined length for carrying the segmented higher layer data units (SAR-SDU payload units are of 44 bytes predetermined length), the payload unit being a smallest unit in a retransmission protocol employed (SAR-SDU being the smallest unit, see Fig. 3);

a segmentation indicator field in a beginning of one or more of the payload units in the lower level protocol data unit, if required (providing SARH at the beginning of each SAR-PDU unit, see Fig. 3); and

at least one indicator in a header (Segment Type ST) of the lower layer protocol data unit (Segment Type ST in the header of the SAR-PDU)which one or ones, if any, of the payload units

contain the segmentation length information (Segment Type indicates whether it is the ending of message EOM, and if it is, the last payload unit is appended with LI effective length information, see col. 3, lines 51-67 and Fig. 3).

Kudoh does not explicitly show a mobile station is used as the network element to implement the data assembling and disassembling functions mentioned above.

However, Duault discloses a data processing system and method of communicating mobile voice data with ATM network (see col. 4, lines 54-67 and Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine data assembling/disassembling system and method of Kudoh with the teaching of mobile voice data communicating with an ATM network such that the mobile station is used as the network element to implement the functions of the data assembling and disassembling. The motivation to do so is to provide the ability of transporting variable length data packets into conventional ATM cells with minimum delay.

Response to Arguments

5. Applicant's remarks/arguments with respect to claims 1-20 have been considered but are not persuasive.

Applicant argued that "a lower layer PDU which contains *two or more* data segments *of the higher layer data units*," as recited on the second paragraph, page 13 of and similarly on the fifth paragraph, page 13 of the applicant's remarks/arguments. The Examiner respectfully disagrees. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a lower layer

PDU which contains *two or more* data segments *of the higher layer data units*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's arguments that Kudoh fails to teach or suggest any indication of special information about higher level protocol data units using predetermined values of the segmentation length information and also fails to teach or suggest assembly of the segmented higher level data unit at the receiving end by means of the segmentation length information, applicant's attention is directed to col. 3, lines 50-67 of the Kudoh reference, which teaches using LI to indicate effective length of the frame cell, which is part of the information necessary for assembling the SAR-PDU (lower level protocol data units) into the CS-PDU (higher level protocol data units).

In light of the above, claims 1-16 and 19-20 stand rejected as being anticipated by Kudoh and claims 17-18 stand rejected as being unpatentable over Kudoh in view of Duault.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ajit Patel
Primary Examiner

KDM
Art Unit 2664